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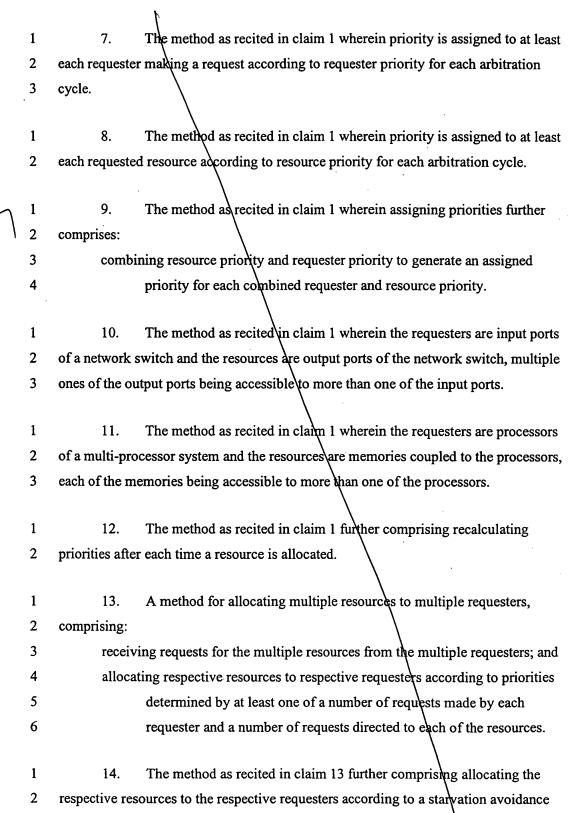
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WHAT IS CLAIMED IS:

1. A method of sharing multiple resources among multiple requesters
using an arbiter, comprising:
receiving requests for the multiple resources from the multiple requesters;
determining respective request priorities corresponding to respective requests
for respective resources made by respective requesters, each request
priority being determined according to at least one of a requester
priority and a resource priority, requester priority being inversely
related to a number of requests made by a particular requester, resource
priority being inversely related to a number of requests made for a
particular resource; and
allocating at least some of the resources according to request priorities.

The method as recited in claim 1, wherein at least one of the requesters 2. is requesting multiple ones of the resources.

- 3. The method as recited in claim λ , wherein at least one resource is 2 requested by multiple requesters.
- 1 4. The method as recited in claim 1 further comprising allocating at least one of the resources to one of the requesters according to a round robin scheme. 2
 - 5. The method as recited in claim 1 wherein the arbiter using the round robin scheme during an arbitration cycle in which all requests for all resources are considered, attempts to allocate at least one resource according to the round robin scheme prior to allocating resources according to request phority, thereby preventing starvation.
- 6. The method as recited in claim 4 wherein the round robin scheme 2 considers multiple requests before allocating resources according to request priority.



mechanism.

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	1	13. Anyarottation apparatus for arottrating requests from a pluranty of
	2	requesters for a plurality of resources, comprising:
	3	means for receiving requests for resources from the requesters; and
	4	means for allocating requests according to at least one of requester priority and
	5	resource priority.
•		
	1	16. The arbitration apparatus as recited in claim 15 further comprising:
	2	means for determining requester priority for each respective requester
1/10	3	according to a number of requests made by the respective requesters,
Sopri	4	the requester priority being inversely related to the number of requests.
(Z)		
_	1	17. The arbitration apparatus as recited in claim 15 further comprising:
- 6 2 7	2	means for determining resource priority for respective resources according to a
	3	number of requests made for the respective resources, the respective
	4	resource priorities being inversely related to the number of requests
الميا الميا الميا الميا الميا الميا الميا	5	made for the respective resource.
<u> </u>		
<u> </u>	1	18. The arbitration apparatus as recited in claim 15 further comprising
विज्ञी पुल्ली कि पहिल्ल पिल्ला पिल्ला	2	means for preventing starvation for requests.
<u>.</u> 1		
	1	19. An apparatus comprising:
	2	a transport mechanism attached to a plurality of resources and a plurality of
	- 3	requesters;
	4	an arbiter coupled to receive a plurality of requests from the requesters, each
	5	of the requests at least one of the resources, the arbiter allocating
	6	resources to requesters according to at least one of a requester priority
	7	and a resource priority, the requester priority and the resource priority
	8	being inversely related to, respectively, a number of requests for
	9	resources made by respective requesters and a number of requests
	10	directed to respective resources.
	1	20. The apparatus as recited in claim 19 wherein the arbiter further

includes a round robin mechanism to allocate resources to requesters

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21.	The	apparatus as recited in claim 19 wherein the requesters are
processors, the	e res	curces are memories, each of the memories being coupled to
multiple ones	of the	processors and the transport mechanism is a plurality of buses
coupling the p	roces	ssors to the memories.

- 22. The apparatus as recited in claim 19 wherein the requesters are input and output nodes of a network and the transport mechanism is a switch.
- 23. A method of sharing multiple resources among multiple requesters using an arbiter, comprising:

 receiving requests for the multiple resources from the multiple requesters; and allocating resources among the requesters as a function of a number of requests made.
- 24. The method as recited in claim 23 wherein the function of the number of requests utilizes how many requests are made by each requester.
- 1 25. The method as recited in claim 23 wherein the function of the number 2 of requests utilizes how many requests made for each resource.
 - 26. The method as recited in claim 23 wherein the function of the number of requests utilizes a combination of how many requests made for each resource and how many requests are made by each requester.
 - 27. A computer program product encoded in at least one computer readable medium to implement an arbitration mechanism to allocate multiple resources among multiple requesters, the computer program product comprising: code executable to receive requests for the multiple resources from the multiple requesters; and code executable to allocate respective resources to respective requesters according to priorities determined by at least one of a number of requests made by each requester and a number of requests directed to each of the resources.



28. The computer program product as recited in claim 27 wherein the computer program product further includes code to implement a starvation avoidance mechanism.

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29. The computer program product as recited in claim 27, wherein the at least one computer readable medium is selected from the set of a disk, tape or other magnetic, optical, or electronic storage medium and a network, wireline, wireless or other communications medium.